Georgia Coastal Analysis Partnership (GCAP)

The Georgia Coastal Analysis Partnership (GCAP) is a joint initiative (begun July 2001) by scientists from NOAA, EPA, and Georgia Department of Natural Resources to coordinate results of ongoing federal and state monitoring programs along the coast of Georgia in an effort to support common research and coastal-management goals.

Key objectives of GCAP are:

- To develop an initial inventory of sampling activities in the region (consisting of maps of station locations and a corresponding summary of types of samples collected at each site).
- To use the inventory as a starting point for collecting data to address coastal research and management issues of common interest to all participating institutions.
- To demonstrate the benefits of performing science through partnerships.

Scientists at the NCCOS Charleston Lab have begun to assemble the sampling inventory that will serve as a basis for identifying sources of information for addressing various coastal-analysis issues. Information on types and locations of sampling activities is being entered now for the following data sets: (1) NOAA benthic survey sites at GRNMS and adjacent shelf waters; (2) NOAA fish survey sites at GRNMS and adjacent shelf waters; (3) EPA/NOAA historic EMAP sites (1994-95); (4) NOAA sediment-toxicity and chemical-contaminant survey sites in Savannah and New Brunswick Harbors; (5) Georgia DNR's water-quality monitoring sites and EMAP's new National Coastal Assessment monitoring sites; (6) Skidaway Institute of Oceanography meteorological and oceanographic sampling sites at offshore platforms under the SABSOON program; and (7) U.S. ACE sampling sites along the coast of Georgia.

A major focus of GCAP is on combining resources to tackle coastal-management issues of importance to both federal and state partners. One such issue that GCAP partners have begun to work on is:

"Investigating the extent to which land-based sources of pollutants and other materials are transported through major river systems to offshore shelf environments and the potential effects (positive or negative) that these materials may have on biological resources along the way."

This issue is of importance in fulfilling both state and federal coastal-management needs and represents a topic that can be addressed by results of ongoing projects. As a result of collective sampling activities, GCAP partners have (or soon will have) synoptic data on condition of benthic and demersal fauna, pollutant levels, and other environmental conditions along a series of onshore-offshore transects in three major systems: Sapelo, Doboy, and Altamaha Sounds. By focussing initial efforts on these three systems, it will be possible to examine spatial patterns from the upper reaches of estuaries, through the mouths of these three sounds, and out to inner-shelf depths of the GRNMS.

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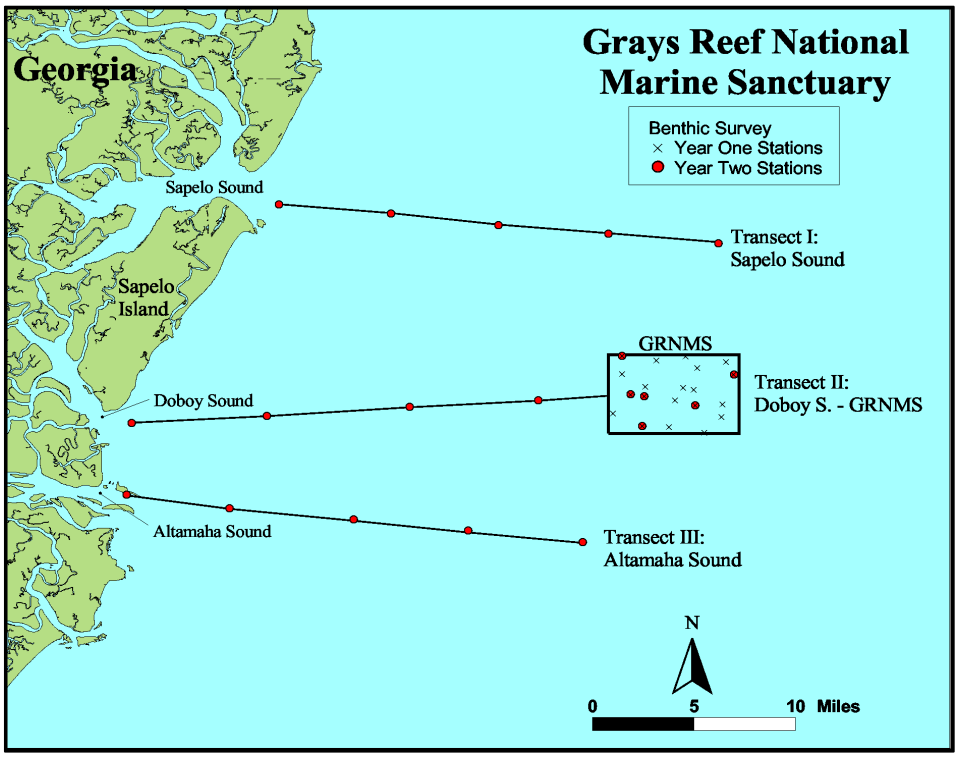
[Note that the map on the right shows sampling sites only for the ongoing NOAA benthic survey at GRNMS and nearby shelf waters; Georgia DNR has many additional sites extending from the mouths of these three sounds into the upper reaches of the estuaries].



As part of the ongoing NOAA benthic survey of GRNMS, samples of benthic macroinfaunal communities, chemical contaminants in sediments and biota, and other general habitat conditions were collected (spring 2000-01) at sites within the sanctuary and in nearby inner-shelf waters along the three cross-shelf transects shown in the map. An important finding from the first year of this research was the detection of trace concentrations of pesticides, PCBs and PAHs in both sediments and biota within the boundaries of the sanctuary. The presence of these contaminants, though not at concentrations likely to cause significant bioeffects, demonstrates that chemical substances originating from human activities are capable of reaching the offshore sanctuary environment, either by air or underwater cross-shelf transport from land. The inner shelf of the SAB is occupied by waters known to undergo episodic cross-shelf transport.

Under the GCAP initiative, we will be focusing on developing a more comprehensive understanding of the onshore-offshore distribution of these materials and their potential bioeffects, and of the processes driving the observed patterns. At least two significant outcomes are expected:

- Providing information to the Georgia DNR to help with efforts to develop appropriate management strategies for maintaining healthy environmental conditions and protecting living resources in coastal habitats of Georgia; and

- Using this initiative as a pilot study of the ecology of the South Atlantic Bight and a demonstration of how activities on land may have a significant influence on the quality of this offshore environment.

Representatives of Georgia DNR expressed at an initial GCAP planning meeting how the first of these outcomes would be of tremendous value to their agency. Moreover, the second outcome should be of direct value to NOAA in view of its recent interests in granting Marine Protected Area (MPA) status to key offshore sites throughout the SAB.

For further information contact Dr. Jeffrey Hyland: telephone = 843/762-8652; email = jeff.hyland@noaa.gov.